CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

October 12, 2001

Todd Stewart, LECEF Project Manager
4160 Dublin Boulevard
Dublin, CA 94588

Dear Mr. Stewart:

LOS ESTEROS CRITICAL ENERGY FACILITY POWER PROJECT
(01-AFC-12) DATA REQUESTS

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission (Energy Commission) staffs requests that the Calpine c* Power supply the information specified in the enclosed data requests.

The subject area addressed in the 27 attached data requests, numbered 147 through 173, is Biological Resources. Other data requests may be submitted at a later date. The information requested is necessary to: 1) understand the project, 2) assess whether the project will result in significant environmental effects, and 3) assess project alternatives and mitigation measures.

Written responses to the enclosed data requests are due to the Energy Commission by October 25, 2001 or at such later date as may be agreed upon by the Energy Commission staff and the applicant.

If you are unable to provide the information requested in the data requests or object to providing it, you must contact the committee assigned to the project, and the project manager, within 5 days of receiving these requests stating your reason for delay or objections.

If you have any questions regarding the enclosed data requests, please call me at (916) 651-8853.

Sincerely,

Robert Worl
Siting Project Manager

Enclosure
cc: Proof of Service 01-AFC-12
Agency Distribution List

Los Esteros Critical Energy Facility (01-AFC-12)
Data Requests

Technical Area: Biological Resources
Author: Julie Colyer and Natasha Nelson
Technical Senior: Jim Brownell

BACKGROUND

LECEF will operate four natural gas-fired combustion with selective catalytic reduction (SCR), a fire pump, and an emergency generator that will discharge exhaust gases into the atmosphere. Emissions include sulfur dioxides, nitrogen dioxides (NOx), and particulate matter with an aerodynamic diameter or 10 microns or less (PM10). Of particular concern are impacts of NOx emissions on surrounding serpentine soils and their associated endemic species. Nutrient-poor serpentine soils support an array of plant species specifically adapted to the edaphic conditions. Nitrogen is the primary limiting nutrient for plant growth on these soils, and the lack of adequate growth conditions has prevented the invasion of non-native grass species. Nitrogen deposition, primarily from industrial and vehicle emissions, artificially fertilize the soils, creating better conditions for the non-native species to persist and ultimately out-compete the native species. Some of the serpentine endemic plant species are federally-listed, and some, act as host plants to sensitive wildlife. Thus, potential nitrogen deposition impacts to serpentine communities is a concern of both the U.S. Fish and Wildlife Service and CEC.

DATA REQUESTS

147. Please provide a worst-case* analysis of the natural gas-fired combustion turbines separate from the emissions of the emergency generator and fire pump using the Industrial Source Complex Short Term Version 3 (ISCST3) model. The analysis should specify the amount of nitrogen deposition in the units kg/ha/year and the amount of deposition expected at nearby serpentine soils (Coyote Ridge, Communications Hill, and Tulare Hill) from just the natural gas-fired combustion turbines. Identify if the serpentine habitat is critical habitat for bay checkerspot butterfly (Federal Register, April 30, 2001). Provide an isopleth graphic over a USGS 7.5 minute quadrangle maps (or equally detailed map) of the direct deposition values (not weighted average).

148. Please provide a worst-case analysis* of the emergency generator and fire pump emissions separate from the emissions of the natural gas-fired combustion turbines. The analysis should specify the amount of nitrogen deposition in the units kg/ha/year and the amount of deposition expected at nearby serpentine soils (Coyote Ridge, Communications Hill, and Tulare Hill) from just the emergency generator and fire pump. Identify if the serpentine habitat is critical habitat for bay checkerspot butterfly (Federal Register, April 30, 2001). Provide an isopleth graphic over a USGS 7.5 minute quadrangle maps (or equally detailed map) of the direct deposition values (not weighted average).

149. Please provide a worst-case* analysis of the nitrogen deposition from the ammonia slip out of the exhaust stacks of the combustion turbines. The analysis should specify the amount of nitrogen deposition in the units kg/ha/year and the amount of deposition

expected at nearby serpentine soils (Coyote Ridge, Communications Hill, and Tulare Hill). Identify if the serpentine habitat is critical habitat for bay checkerspot butterfly (Federal Register, April 30, 2001). Provide an isopleth graphic over a USGS 7.5 minute quadrangle maps (or equally detailed map) of the direct deposition values (not weighted average).

150. Provide a discussion of what types of nitrogen are generated as a result of the project, and what these nitrogen products change into when they mix with the atmosphere, and how much time it takes for these chemical reactions to occur. If certain conditions need to exist for these reactions to occur (e.g., temperature and availability of ozone), then please describe them in layman terms. If possible, use these results to explain the maximum and average distance from the power plant facility that the nitrogen changes into NO2 and HNO3. Give a complete citation for all references used in this analysis.

151. Please describe when the Emission Reduction Credits for NOx will be purchased, what is their most likely location in relation to the power plant (e.g, direction and number of miles), and at what ratio they will be purchased. Describe if these credits are already part of an existing bank, or if a new source is being proposed. Differentiate the number credits being bought for the emergency generator and fire pump, and the natural-gas fired combustion turbines.

152. Please model the reduction of nitrogen deposition on serpentine soils, using the ISCST3 model, from the retrofitting of the existing Calpine Gilroy Cogen with SCR (see Data Adequacy Responses to Section 2.1 [01-AFC-12], dated September 14, 2001). Provide an isopleth graphic over a USGS 7.5 minute quadrangle maps (or equally detailed map) of the direct deposition values (not weighted average).

153. Provide the complete calculation (e.g., the amounts used) for the statement "… the power plant results in only a 0.1% increase over ambient conditions." Provide what the ambient/background levels are in the project area and the source for this information (e.g., a complete copy of the paper or report cited).

154. Update the Cumulative Impact Analysis output (Table 8.1-29) to show the amount of nitrogen deposition in the values tons per year and kg/ha/yr. Provide an isopleth graphic over a USGS 7.5 minute quadrangle maps (or equally detailed map) of the direct deposition values (not weighted average).

*Analysis should assume same parameters as those done for Metcalf Energy Project Nitrogen Impact Analyses (available by request): 100% conversion of ammonia and oxides of nitrogen into depositional nitrogen, 80% dry deposition, and operation at highest number of hours; or, explain what factors were considered to create the worst-case scenario

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The Air Resources Division of the National Park Service and the Air Quality Branch of the U.S. Fish and Wildlife Service have developed a Depositional Analysis Threshold (DAT) for nitrogen deposition within Class I air quality areas (e.g., wilderness areas, including those in refuges; see http://www2.nature.nps.gov/ard/flagfree/). Staff's analysis of potential impacts to these areas depends on having a modeled amount of nitrogen deposition for the nearest

Class I areas. Although your AFC stated it would cover Class I area air emission impacts (page 8.1-28), such data was not found by staff. In addition, staff does not have any information on the potential nitrogen deposition values at Don Edwards San Francisco NWR (a Class II area), and their relationship to the Class II threshold established by NAASQ or the EPA under PSD (see http://policy.fws.gov/563fw2.html).

DATA REQUEST

155. Provide a table of potential nitrogen deposition on the nearest Class I and Class II area(s) (e.g., within 20 miles) in the units kg/ha-yr. Also include in the table the SO2 and PM10 deposition levels and the Class I and II thresholds from NAASQ and PSD.

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159. Provide a discussion of what types of nitrogen are generated as a result of the project, and what these nitrogen products change into when they mix with the atmosphere, and how much time it takes for these chemical reactions to occur. If certain conditions need to exist for these reactions to occur (e.g., temperature and availability of ozone), then please describe them in layman terms. If possible, use these results to explain the maximum and average distance from the power plant facility that the nitrogen changes into NO2 and HNO3. Give a complete citation for all references used in this analysis.

160. Please describe when the Emission Reduction Credits for NOx will be purchased, what is their most likely location in relation to the power plant (e.g, direction and number of miles), and at what ratio they will be purchased. Describe if these credits are already part of an existing bank, or if a new source is being proposed. Differentiate the number credits being bought for the emergency generator and fire pump, and the natural-gas fired combustion turbines.

161. Please model the reduction of nitrogen deposition on serpentine soils, using the ISCST3 model, from the retrofitting of the existing Calpine Gilroy Cogen with SCR (see Data Adequacy Responses to Section 2.1 [01-AFC-12], dated September 14, 2001). Provide an isopleth graphic over a USGS 7.5 minute quadrangle maps (or equally detailed map) of the direct deposition values (not weighted average).

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